Attorney Docket No.: 133001.00101

1. (Withdrawn) An assay device, comprising an array having both a planar surface and a configuration of reaction loci thereon, with each of said loci consisting essentially of at least one peptide or protein at least substantially suspended or dissolved in a hydrophilic carrier for said peptide or protein.

2. (Withdrawn) The assay device of claim 1, wherein said planar surface further comprises a nonporous chip or slide.

3. (Withdrawn) The assay device of claim 1, wherein said nonporous chip or slide includes a component selected from the group consisting of silicon; glass; silica; quartz; polystyrene and polyalkylene polymer.

4. (Withdrawn) The assay device of claim 1, wherein said configuration of reaction loci is that of a rectangular grid.

5. (Withdrawn) The assay device of claim 1, wherein said hydrophilic carrier is selected from the group consisting of saccharides, aklylene diols and alkylene polyols and said reaction loci measure between about 10 and 250 micrometers.

6. (Withdrawn) The assay device of claim 1, wherein said hydrophilic carrier is selected from the group consisting of dextranl; pluronic acid; carbohydrates of the pentose; ribose or hexose families; polysaccharides; polyethylene glycol polymer; 1,2-ethanediol; 2,3-butanediol and 1,2,3-propanetriol (glycerol), and said reaction loci measure between about 50 and 100 micrometers.

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7. (Withdrawn) The assay device of claim 1, wherein said reaction loci further comprises enzyme reaction components selected from the group consisting of cofactors; inhibitors; antibodies; activators and buffer elements.

8. (Withdrawn) The assay device of claim 1, wherein said reaction loci includes a biological molecule or fraction selected from the group consisting of proteins; peptides; nucleic acids; enzymes; antibodies; lipids; cell lysates and vesicles.

9. (Withdrawn) The assay device of claim 1, wherein said loci further comprises fluorogenic substrates, chromogenic substrates or other reporter substrates.

10. (Currently amended) An assay system, comprising:

a computer and a set of operating instructions resident in computer software of the computer for operating:

a set of reactant dot applicator pins;

~~a separate device for biological sample aerosol mist generation;~~

an xy positioner operatively connected to the reactant dot applicator pins, wherein said reactant dot applicator pins create a microarray of liquid hydrophilic reaction dots on a planar surface, each of said reactant dots adhering to said planar surface in a non-covalent manner and having a diameter ranging from 10 microns to 100 microns and being separated by a center to center distance of 50 microns to 500 microns, and having one or more constituents therein; and

~~a chamber within the device for biological sample aerosol mist generation for control of biological samples;~~

a separate device for biological sample aerosol mist generation, wherein the aerosolized biological sample mist droplets are applied simultaneously to said microarray by said separate device for sample aerosol mist generation, without forming a wetting film, for computer-enhanced assay of any reaction between the sample mist droplets and said constituents

~~wherein said dots have a diameter ranging from 10 microns to 100 microns and have one or more constituents therein, wherein the aerosolized biological sample mist droplets are applied simultaneously by said separate device for sample aerosol generation, without forming a wetting film, for computer-enhanced assay of any reaction between the sample mist droplets and said constituents, and wherein said dots are not covalently bound to a substrate~~.

11. (Previously presented) The assay system of claim 10, wherein said system further comprises one or more subcomponents in said device for biological sample aerosol mist generation and wherein said operating instructions send signals, via serial or parallel port, to start, to stop, to establish operating set points and to control said one or more subcomponents of the device, whereby each of said one or more subcomponents may have an internal or external standing controller or driver.

12. (Previously presented) The assay system of claim 11, wherein said one or more subcomponents further comprises at least one device selected from the group consisting of multiple positive displacement microsyringe pumps, pressure nozzles, ultrasonic nozzles, ink-jet printheads, position-actuated ink-jet printheads, surface-actuated ink-jet printheads, fluid-contacting or fluici-noncontacting ultrasound transducers; gas flow meter and controller; and exhaust and filtration fan.

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13. (Currently Amended) The assay system of claim 10, wherein said ~~microsyringes~~ pins hold 1.0 microliters to 1000 ~~uL~~ microliters of biological sample.

14. (Currently amended) The assay system of claim 13, wherein said ~~microsyringes~~ pins deliver samples at a constant flow rate.

15. (Original) The assay system of claim 10, wherein said device for aerosol generation is an ultrasonic nebulizer.

16. (Withdrawn) The method for assaying a biological sample using a peptide or protein chip according to claim 1, comprising:

a. selecting a planar surface;

b. selecting a hydrophilic carrier and arraying a plurality of substrates in discrete reaction loci within aliquots of said hydrophilic carrier on said planar surface;

c. applying an aerosolized or misted sample having a sample droplet size between about 5 and 15 micrometers to the array formed in step (b); and

d. detecting any reaction between the sample and the plurality of substrates.

17. (Withdrawn) A method for assaying a biological sample using a peptide or protein chip according to claim 1, comprising applying an aerosolized or misted sample onto said configuration of reaction loci and detecting any reaction between any constituents of the sample and said peptide or protein contained within said configuration of reaction loci.

18. (Withdrawn) A method for assaying a biological sample using a peptide or protein chip according to claim 1, comprising applying an aerosolized or misted sample onto said configuration of reaction loci using an ultrasonic nebulizer and detecting any reaction between

any constituents of the sample and said peptide or protein contained within said configuration of reaction loci.

19. (New) The assay system of claim 10, wherein said reaction dots comprise a carrier selected from the group consisting of dextran, pluronic acid, carbohydrates of the pentose, ribose or hexose families, polysaccharides, polyethylene glycol polymer, 1,2-ethanediol, 2,3-butanediol, and 1,2,3-propanetriol (glycerol).

20. (New) The assay system of claim 19, wherein said reaction dots further comprise enzyme reaction components selected from the group consisting of cofactors, inhibitors, antibodies, activators, and buffer elements.

21. (New) The assay system of claim 19, wherein said reaction dots comprise a biological molecule or fraction selected from the group consisting of proteins, peptides, nucleic acids, enzymes, antibodies, lipids, cell lysates, and vesicles.

22. (New) The assay system of claim 19, wherein said reaction dots further comprise fluorogenic substrates, chromogenic substrates, or other reporter substrates.